

SUPPLEMENT.

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CANNOCK CHASE, AND ITS COAL MINES—No. I. BY WILLIAM MOLYNEUX.

CANNOCK CHASE, one of the 68 ancient forests of England, was originally an immense tract of country, stretching from Lichfield in one direction, and from Sutton-Coldfield in another, to within a mile of the old borough town of Stafford. It lies in the southern division of the county of Stafford, is divided into two unequal parts by the boundary line of the hundreds of Cuddleston and Offlow; it includes in its area several extensive parishes, and still comprises a range of about 20,000 acres. The Marquis of Anglesey, to whose ancestor, Sir William Paget, it was granted (according to local tradition, for a kitchen garden), by Henry VIII., in the 38th year of his reign, is principal owner, lord of the whole manor, and invested with peculiar powers in the administration of its ancient laws.

The district is generally admitted to have been occupied before the Roman invasion by Cangi, or Cangani, a British tribe who followed the occupation of shepherds, and from whom some writers affirm the term Cannock is derived. Others determine its derivation from the Saxon *cann*, quantity, power of anything, and *oak*, signifying the number of oak trees which formerly grew upon it—upwards of 5000 of which were blown down by a storm in the year 1593; and others, again, invest it with a Danish origin, from Canute, who, it is conjectured, had a residence upon it, and frequently indulged in the sports its depths afforded. It was a favourite resort of the Mercian kings and earls, and shortly after the Norman Conquest Richard de Forester held his land of the gift of the king by the service of keeping the forest of Cannock, and paying to the king yearly the sum of 10 marks. A castle, the remains of which have recently been discovered, of some of the earlier Norman kings, stood upon Castle-hill, in the old park at Beaudesert; and several ecclesiastical institutions were, during the same period, founded in its more fertile and secluded valleys. For centuries before the dissolution the greater part of it belonged to the see of Coventry and Lichfield, whose bishops had a palace on the beautiful slopes of Beaudesert; and here and there over its vast surface hayes or parks were enclosed, the old limits of which are, in several instances, still defined. It is now one of the few forests of England of which any considerable range may be seen in its normal condition; but its long and characteristic history will soon terminate. The Commissioners of England and Wales have already enclosed, and are now enclosing, several thousand acres; and in the course of a few years the 60 miles of road, constructed during the last and present year, at a cost of about 24,000*l.*, will run their straight lengths through a busy and populous centre of mining enterprise and agricultural production, instead of, as now, a wild, moory waste, covered with heather, gorse, and bracken, amongst which deer, grouse, blackcock, snipe, and coney multiply exceedingly for the delectation of the sportsman.

This district, so impregnated as it were with historical associations, is at the present time of particular interest to the miner, for the value and extent of its mineral resources. What this extent may ultimately prove to be is now difficult to say, but there is no doubt of its being in reality considerably larger, and of greater aggregate thickness, than is usually supposed. As is well known, it forms the northern termination or outcrop of the South Staffordshire coal field, and appears in the form of a tongue, which has its apex at Brereton, and its base at Brownhills. The outline thus assumed is the result of faults, which throw down the coal beds on each side, and bring in rocks of the new red sandstone, belonging both to the Bunter and Keuper groups in successive order. Of the eastern termination of the coal beds, at depths accessible to the grasp of known mechanical power, from Brownhills to Brereton, and thence on the same side of the Trent Valley northwards there is no doubt, the downthrow ranging throughout from several hundred feet to as many yards. This variation may easily be seen in traversing its line, which, allowing for its curves and indentations is almost due north and south. At Burnwood, close to the division of this and Hammerwich parish, the fault is exposed in a brickyard, where a bed of clay, 4 feet 6 in. thick, is thrown against the soft red sandstone, which here forms the upper rocks of the coal measures. At the same point, a well-sinking shows this clay to be succeeded by soft highly micaceous red sandstone to a depth of 20 yards, then a bed 17 in. thick of remarkably hard and mottled sandstone, coarse and highly crystalline, in which are sparingly embedded the light-coloured clayey pebbles characteristic of the Bunter conglomerates, which is followed by similar soft variegated sandstones as those above. What the subsidence of the strata might be here has not been determined, but I was told by a freeholder that on the sale of the various small lots of land at Hammerwich, on the east side of the fault, some five years ago, all minerals were specially conveyed with it; while on the sale of similar freeholds at Burnwood, on the west side, two years subsequently, the minerals were reserved. One can hardly suppose the non-retention of the minerals in the first case to be an oversight; the transfer was, in all probability, made in the belief that if coals did exist they were at depths unattainable by human means, and, consequently, so far useless; but, as will be shown hereafter, there are points connected with this line of fault which render it extremely probable that in the course of a few years the opinion now generally held will, in some few instances at least, have to be reversed.

From this point northward the conglomerates thicken considerably, rising on each side into bold and picturesque hills, rounded and hollowed out by denudation. Near the Nag's Head Inn, about a mile from Burnwood, borings for coal were made five years ago through these beds, but, beyond proving them to be 120 yards in thickness, with no satisfactory result. On the higher grounds, above the fine old Tudor mansion of Beaudesert, the conglomerates on the east side of the fault give place to the Keuper sandstones, capped by an outlier of red marl, which are shown in one quarry to lie horizontally, and in another, more to the west, to dip at a slight angle with the coal measures, which are here brought in, and form the highest ground of the Chase. The fault on dividing Castle Hill runs on to Brereton across the old park, and is marked throughout its course up the Trent Valley by Keuper sandstones and red marls on the east, and Bunter beds on the west, the latter furnishing the gravel of Milford, and the former the well-known stone of Tixall and Weston, and the rocks of the Beacon, Yarlet, and Stone hills, until it brings in the upper coal measures of Moddershall, in North Staffordshire.

The western boundary of the coal field is formed by the equally great fault which has its origin above Wolverhampton, and is accompanied by a narrow strip of Permian rocks, to within a mile and a-half of Cannock, where it divides, the lesser running into the Bunter beds, and the main fault striking northwards, bringing in the same rocks to within a short distance of Stafford. Two miles north of Cannock the coal measures form a kind

of headland, behind which the conglomerates run in the form of a bay, and thence gradually contract the coal strata to their apex at Brereton. From this headland almost to the latter place the coal measures dip conformably beneath the conglomerates, but how far the arrangement is maintained has not been correctly made out.

The area within these boundaries forms the Cannock Chase coal field, and it may be laid down as six miles in its greatest length by from five in its greatest width, to a blunt point of a few feet. The whole of this extent is, except in one or two instances, covered up by variable gravel beds resting immediately on rocks of the coal formation. The gravel beds of the higher parts of the chase are of undisturbed Bunter series, of great thickness, and picturesque outline. Descending into the plain these beds thin out, exactly like a wave on a sandy beach, forming here and there low running hills and winding hollows, and are met by another deposit of gravel, which fills all the lower parts of the chase, and runs up the southern valleys of the county for a considerable distance. These gravel beds derive their origin from the Bunter series, but from the want of specific knowledge the period of abrasion is somewhat doubtful. In numerous places they are overlaid by deposits of peat of variable depth, and range from a few feet to 30 yards in thickness, but it is difficult in some instances to determine the line by which they are separated from the parent rock. There is no doubt from the occasional admixture of coal clays with these beds that the coal measures have been worn down by the same aqueous action which denuded the flanks of the Bunter hills surrounding them.

An examination of these beds is particularly interesting. They consist of rounded pebbles of white, blue, liver, and other coloured quartzites, cherts, and almost every variety of primary sandstone, ranging in size from a pea to large fragments of many pounds in weight, and all showing long continuous watery action. With them are to be found specimens of agate, chalcedony, jasper, and other ornamental stones, sometimes of great beauty, besides a remarkably fine series of fossils, from both the lower carboniferous limestones and the Carboniferous sandstone, to which objects the attention of the naturalist was specially directed nearly 200 years ago. It is a singular feature in these beds that they should, so far as the examination went, yield no examples of flint and trap rocks which accompany the drift deposits of the river valleys of the county; and also that there should in like manner be an utter absence of granitic boulders over the same area.

At what period mining operations were originally commenced in this field is not easy to determine. The Britons were not ignorant of the use of coal, and likely enough worked some of the outcrops in this old forest, one species of which, Cannel, is derived from the British *cann*—i.e. bright, luminous; and *gryll*, black. The Romans, whose city of Eboracum stood on the Chase, were, without doubt, familiar with its minerals, and this knowledge would descend with the various occupiers of the district during many centuries. Over the old park at Beaudesert are numerous long-abandoned outcrop workings; and it is remarkable that the historical reference to these coal works is, so far as I can discover, the oldest of the kind pertaining to the county. This reference is contained in a curious rental of Sir William Paget, dated 3d of Edward VI., which alludes particularly to a mine of coal below the old park there, valued at 4*l.* per annum, and a "smithe mill," situated in the same ancient park. From this it is evident that not only was coal then mined at this particular place, but also that the manufacture of iron was carried on at the same locality.

MONEY MAKING—No. VIII.—(Concluded.)

An inspector is constantly engaged in examining the products of the presses, and assuring himself that they are as near perfection as possible. It is, indeed, of the greatest consequence that pieces of money, and especially gold pieces, stamped at the royal presses, should be free from artificial and mechanical defects. In the operation of stamping the erstwhile dump of polished metal is, as it were, covered with work. How essential that that work should be well executed, and made next to impossible of imitation by counterfeit money makers! The inspector of coins is also custodian of dies, and he determines the moment for removing worn or defaced dies from the presses, and substituting for them new ones. Each pair of dies should coin from 30,000 to 40,000 sovereigns, and dies made of steel, specially prepared for the purpose by Thomas Turton and Sons, of Sheffield, are by far the best. After that amount of work has been obtained the dies become worn in appearance—that is to say, the sharp, fine lines of the devices vanish, and the resulting coins beget a similitude to castings. When a certain accumulation of coins takes place in the catch-pans they are removed, and the attendant workmen examine them, and reject any coins which may be imperfect, or soiled by contact with oil. These latter are denominated, in the parlance of the Mint, "brockages," and are transferred eventually to the crucibles of the melting-house for re-melting. The accepted coins are weighed up at the close of each day, put once again into journey-bags, deposited in the strong room of the department, and doubly locked up for the night. The maximum number of pieces, whether of gold, silver, or bronze, which the Mint presses are capable of producing in a day of ten hours is 200,000.

Thrice a week during a gold coinage the officer of the coining Press-room yields up to the Central Office of Receipt and Delivery instalments of his rich charge, in order that they may be transmitted to the Bank of England. The journey-bags, each of which, as has been stated, contains 701 sovereigns, or double that number of half-sovereigns, weighing 180 ozs. and a fraction, are for convenience sake packed in companies of eight into wooden trays; each tray, therefore, contains 5608 sovereigns. Twelve such trays, with four journey-weights added, make one delivery, or 70,100*l.* Closed omnibus trucks are used for transmitting these by tramway to the office. Arrived there, the next operation is to pound and "pyx" the glittering coins. The operation of pyxing is very ancient and curious, and an instructive chapter might well be written upon it. Preliminarily a pound weight is taken at random out of each journey. These are weighed by the Queen's assayer in small and delicate scales, and the number of grains plus or minus of the exact pound is recorded by himself and a check officer. Another officer, usually the Deputy-Master of the Mint, weighs individual pieces from the tested pounds, and notes also their weight. Those pieces are put aside, some for the pyx-chest and some for the assayer, who will again assay them.

The pyx-chest pieces are reserved for the periodical "trial of the pyx," a ceremony in which the Chancellor of the Exchequer and sundry other great officials play important parts, but which ceremony cannot here be described; it, however, concludes with a dinner. Other coins are substituted for those abstracted from the journey-bags, and a representative from

the Bank attends after the final assay has been made, and receives the 70,100*l.* for delivery to the Threadneedle-street cellars. This official writes a receipt for the treasure, and stout porters, depositing it in chests, placed in carriers' carts, guard it through the streets to the Bank.

Not long since it was necessary to have escorts of soldiers from the Tower to protect the loads of money in their transit through the intervening streets. Now, thank Heaven! a happier state of things exists, and million after million of coined sovereigns pass through them with as little anxiety and care as are necessary in forwarding bales of Australian wool from the docks to the railway station.

We have thus endeavoured to describe the whole of the operations through which ingots of gold pass in the course of their transformation into current coin of the realm; and although conscious of some shortcomings in the work, we believe that, so far as it goes, it is an accurate reflex of those operations. Little has been said of silver or bronze coinages, the processes in regard to which are somewhat different to those practised on the more precious metal. Possibly, at some future time, these may be dealt with; as also may another interesting branch of coining, the engraving and manufacture of dies. For the present, this series of papers is concluded, and the writer has to thank the readers of the *Mining Journal* for the patient and appreciative attention with which they have been received. It has been rather disadvantageous to both the readers and the writer, that the appearance of the several chapters has been intermittent rather than continuous. This has arisen from editorial exigencies of an unavoidable character, and may, therefore, it is hoped, be pardoned. Should there be any point which may not have been sufficiently elucidated, the writer will be happy to supply, on application through the Editor, the deficiency.

FOREIGN MINING AND METALLURGY.

In France, the great pre-occupation of the moment arises from the deliveries of rails required by the leading railway companies. Several contracts have been already concluded, and others are in course of negotiation; some works will thus have engagements assured for some time to come, and will have to give a great extension to their production. The Eastern of France Railway Company has recently adjudicated 50,000 tons of rails; the lowest tender was delivered by M. de Wendel, of Hayange, who offered to supply them at 7*l.* 4*s.* to 7*l.* 8*s.* per ton, at the works. The Belgian establishments stood out for 7*l.* 12*s.* per ton. Independently of this important delivery to be made to the Eastern of France Company, the Hayange forges have obtained an order for rails to be delivered to the Northern of France Company; and in order to meet his engagements, M. de Wendel, it is stated, will extend his rolling-works, and put them in a condition to produce from 40,000 to 50,000 tons of rails annually. The Northern of France Company, independently of a contract for 25,000 tons of rails concluded with the Hayange works, has also given an order for rails to the Northern Forges Company at Hautmont, at 7*l.* 8*s.* per ton. The other French railway companies are negotiating with French works with reference to rails, and it is stated that Belgian and other foreign firms cannot effectively compete with French ironmasters in the matter, the customs duty imposed on rails (2*l.* 10*s.* per ton) being more than sufficient to secure the preponderance of the latter in the French home market. There is nothing very striking to notice in connection with the iron trade of the Haute-Marne. Pig is firm at 2*l.* 2*s.*, and rolled iron from wood-produced pig is held at 9*l.* 4*s.* to 9*l.* 12*s.* per ton, according to the works; while mixed iron make 8*l.* 14*s.*, and hammered 10*l.* 12*s.* per ton. The Clermont rolling-works, stopped for a brief space for hydraulic repairs, has re-lighted all its furnaces, and the establishment is about to be extended with a fourth furnace for re-heating purposes, as well as two puddling-furnaces. New works are about to be created at Longwy, in the Moselle, by MM. Labat and Legendre; the establishment will comprise three blast-furnaces, worked with coke. Official returns show that during May 2630 tons of special iron, and 1663 tons of castings for constructive purposes, entered Paris; as compared with 1862, these figures show an increase of 599 tons under the head of iron, and of 90 tons under the head of castings. New modifications and reductions of tariffs have just been submitted to the approbation of the Government; among others, the Eastern, Ardennes, and Northern companies have adopted a common tariff for the carriage of rough pig from the Dunkerque, Calais, Boulogne, and St. Valéry stations, to those of Euryville, Chéville, Joinville, Donjeux, Vignory, Bologne, Vendeville, Bar-sur-Aube, Clairvaux, Bar-le-Duc, Nançois-le-Petit, Frouard, Nancy, Pont-à-Mousson, Novéant, Ars-sur-Moselle, Strasbourg, Bollwiller, Mulhouse, Thann and Basle. The newly-proposed rates amount to 10*s.* 10*s.* per ton, including terminal charges, for the shortest run to St. Dizier, and to 1*l.* 1*s.* 10*s.* per ton for the longest to Basle. Works for the fabrication of steel, after the Piquet process, are about to be established near the Imperial manufactory of Châtelleraut. Belgian metallurgy does not present much activity, and current affairs are without importance; prices reflect this inactivity in the market, and have generally little firmness. At Liège pig sustains itself with difficulty at 2*l.* 10*s.* per ton, in consequence of the stocks which exist at various works, and contracts at rates below this point would not have been refused during the last fortnight. Casting pig has made 3*l.* 14*s.* per ton for No. 5, with a scale of 2*s.* to 4*s.* per ton between the other numbers; merchants' iron have brought 8*l.* 4*s.*, 6*l.* 10*s.*, and 7*l.* 8*s.* per ton, according to numbers; No. 2 plates have brought 8*l.* 16*s.*, and No. 3 ditto 9*l.* 12*s.* per ton. At Charleroi, also, it is stated that business is dull and heavy. Prices are little more than nominal, producers showing themselves ready enough to concede contracts; the only branches of industry in which any activity prevails are rails and machinery. The East Belgian Railway Company has decided upon amalgamating with the Antwerp and Rotterdam; and this fusion, which will be carried through with little delay, is expected to prove advantageous to the Charleroi basin, as it will enable its products to be delivered in Holland without its being necessary for them to leave the lines of the East Belgian system. The Compagnie (Nord) Colliery Company has declared a dividend of 3*l.* 4*s.* per share, which, added to the interest of 1*l.* per share already paid, makes the total distribution for 1862, 3*l.* 4*s.* per share. The annual meeting of the Longwy-Ferrand Colliery Company has been fixed for Monday, August 3, when the balance-sheet for the exercise 1862-3 will be submitted for the approval of the proprietors. The next ordinary general meeting of the Marcinelle and Couillet Blast-Furnaces, Ironworks, and Collieries Company stands for Thursday, August 6.

Prices of copper have been well sustained at Paris and Havre, and in this latter market numerous transactions took place last week, as well in Lake Superior as in Chilean. The quotation for Chilean and Peruvian, in bars, at Havre has been 86*l.* 8*s.*; for Peruvian minerals (pure standard), 89*l.*; for United States (Baltimore), 93*l.*; ditto (Lake Superior), 99*l.* to 104*l.*; Mexican and La Plata, in bars, 82*l.* to 83*l.*; Russian, 104*l.* to 108*l.*; old yellow copper, 50*l.* to 58*l.*; and red ditto, 84*l.* to 86*l.* per ton. At Paris English, in plates, has brought 93*l.*; tough cake, 93*l.*; Lake Superior, 108*l.*; Chilean, 90*l.*; Corocoro mineral, 94*l.*; red rolled, 102*l.*; and yellow rolled, 90*l.* to 92*l.* per ton. As regards tin, we may note that the last reported quotation from Antwerp is 79 *fl.* to 80 *fl.*, while at Rotterdam and Amsterdam it has made 76 *fl.* to 77 *fl.*. At Paris Banca has made 138*l.*; Detroit, 134*l.*; and English, 125*l.* per ton. At Havre Banca has brought 121*l.* to 132*l.*; Detroit, 128*l.*; Peruvian, 100*l.* to 114*l.*; and Peruvian mineral, 54*l.* per ton. Zinc has been rising in the Paris, Hamburg, and Bremen markets. At Havre a lot of 100 tons of Westphalian has been dealt in at 18*l.* 10*s.* per ton, Paris conditions; other descriptions, however, have only brought 18*l.* 2*s.* per ton. At Paris, rough Silesian has made 19*l.* 4*s.*, and rolled 22*l.* to 23*l.* 16*s.* per ton. Lead has been in less demand, and prices are sustained with some difficulty; at Paris French, Spanish, and Belgian ananims were last quoted 22*l.*, and rolled 25*l.* 4*s.* per ton; at Havre Spanish has brought 20*l.* per ton.

M. Varnier, an industrial of St. Dizier, has published some speculations on the question whether it is desirable to employ washed coke instead of ordinary coke in the fabrication of pig. Positive information on the subject being likely to be of practical utility, we are induced to follow M. Varnier in some of his data. Coke-worked furnaces, at least the first which utilised this combustible, were constructed close to collieries, so that the useless matter which unwashed coke encloses cost nothing for transport; besides, for a long time only this description was produced, and when the washing of coal was commenced very imperfect apparatus was employed, involving a great cost for maintenance, and a considerable loss of coal. This augmented the price of coke beyond the advantage derived from it in consumption. Unwashed coke is also less dense, and fuses more easily. For some time

amount of insufficient capacity were in use, the blast especially not being sufficiently powerful; hence there has arisen a habit of consuming mediocre coke, because if its return is not advantageous it adapts itself perfectly to the blast-furnace. A considerable quantity of coke has been delivered to consumption under the name of half-washed, which is not washed at all; for example, in mines where rich coal sells preferentially coke is fabricated with the mess and dust coal. With these two elements a fine coke is obtained, which has almost the appearance of washed, and it is only by inspection that the quantity of cinders which it contains can be distinguished. From 12 to 15 per cent. are then met with in it, sometimes more, while in well washed coke the proportion is only 6 to 8 per cent. Mr. Varner proceeds to examine the consequences of the error where operations are carried on with impure combustibles, both from an economical point of view, and also as regards the quality of the products. Thus, taking for example the medium quality of the washed coke of the Mons basin, it costs 17s. 6d. per ton, and the railway carriage, customs, carting, &c., amount to 10s. 4d. more, making a total of 28s. 10d. per ton. This coke contains 94 to 95 per cent. of combustible matter. The washed coke costs 1s. 8d. per ton less, but contains only 85 per cent. of combustible matter, of which at least 10 or 12 per cent. have to be expended in order to reduce the extra 10 per cent. of useless matter which it contains as compared with washed coke. It results from this that if 95 per cent. of calorific is made available in the first description of coke for 17s. 10d., while 80 per cent. of calorific in the latter cost 11s. 6d., 24 per ton, 1 per cent. cost 0.370d., in the first case, and 0.414d. in the second. In order to fabricate a ton of pig with material yielding about 40 per cent. of iron one requires 1.2 tons of washed coke; and, carrying out the calculation previously made, it appears that the cost of combustible where washed coke is employed is 11.13s. 9d. per ton, and where unwashed coke is used 11.17s. 8d. per ton. Thus, as nearly as possible, pig manufactured with unwashed coke costs 4s. per ton more than that produced with the employment of the purest possible combustible. Mr. Varner affirms that the theory which he has set up and supports with these figures is completely confirmed by practice, and that it has been shown that there is a difference of about 1/4 ton of coke when washed combustible is employed. This difference is even more considerable than that which his theory involves, showing that in order to annihilate the 10 per cent. of useless matter which unwashed coke comprises will absorb more than the 8 or 10 per cent. of combustible allowed to that operation. On the actual scene of a coal working the difference attending the use of unwashed coal is less great, but the further one is situated from a colliery the greater is the advantage attending the use of good combustibles, for if schist and cinders are purchased there are still the transport expenses to pay.

The committee of French coal owners has prepared a statement illustrating the production of coal last year in the department of the Nord, from which it appears that the extraction of the following thirteen mines was as follows:—Fresnes, 51,040 tons; Vieux-Condé, 126,896 tons; Raimon, 132,936 tons; St. Saulve, 23,871 tons; Anzin, 413,280 tons; Denain, 87,948 tons; Aniche, 309,285 tons; Douchy, 145,319 tons; Azincourt, 38,760 tons; Escapout, 40,784 tons; Vicoigne, 96,800 tons; Escarpelle, 112,920 tons; Annonville, 13,935 tons. The coal produced by the Fresnes, Vieux-Condé, Escapout, and Vicoigne mines is anthracite; that of the Raimon, St. Saulve, Aniche, Escarpelle, and Annonville mines is hard coal; and that of the Anzin, Denain, Douchy, and Azincourt mines is rich coal, burning with long flame. The average sale price per ton, in 1862, was as follows:—Fresnes, 8s. 2d.; Raimon, 8s. 2d.; Anzin, 8s. 6d.; Denain, 10s. 6d.; Aniche, 9s. 9d.; Douchy, 9s. 1d.; Azincourt, 10s.; Escapout, 9s. 7d.; Vicoigne, 8s. 7d.; Escarpelle, 9s. 5d.; and Annonville, 9s. 2d. The mines of the department of the Nord have generally presented greater regularity in price than those of any other mining district in France, but in 1862 this regularity was much reduced, in consequence of the considerable oscillations which occurred in the neighbourhood of Mons, where coal of good quality, which hitherto maintained its price at 10s. 6d. to 11s. 2d. per ton, fell last year to 8s. 5d. per ton, and even lower. In the first month or two of the present year good qualities of coal from the department of the Nord sold at 10s. 2d. per ton, but in consequence of the coal question in France, was submitted at 9s. 9d. per ton. In connection with the coal question in France, we may state that the traffic on the Beasques and Alais Railway, which is almost entirely a coal line, has experienced a further considerable expansion this year.

Meetings of Public Companies.

WHEAL CROFTY MINING COMPANY.

A meeting of adventurers was held at the account-house on the mine, on Tuesday, Mr. F. KERR WILSON, of the Stock Exchange, in the chair. A considerable body of shareholders were present, among whom were Messrs. R. Hawke, Liskard; Albert C. L. Glubb, Liskard; W. Locock Webb, London; R. Clogg, Liskard; J. Elliot Square, London; John Williams, Plymouth; H. C. Salmon, Hayle; Joseph Reynolds, London, &c.; with the purser, Mr. James Lanyon. Mr. F. KERR WILSON, on taking the chair, stated that the object of their meeting there to-day was to receive the report of their agents, and consider what means they should provide for the future vigorous prosecution of the mine. In walking to the mine that morning, they had all had an opportunity of appreciating the position of the sett, closely surrounded on all sides by mines, every one of which had yielded, or are now yielding, enormous profits. With a sett in such a position, and comprising (as will be seen by the report) a large extent of unworked ground between the two great cross-roads of the district, and with a sufficient plant of machinery, he thought the shareholders were in a position to congratulate themselves. He then called on Captain Skewes, who read the following report:—

Wheal Crofty is in the parishes of Hlogan and Camborne, and bounded on the north by North Crofty (formerly part of East Crofty), on the south by Dolcoath and Cook's Kitchen, on the east by Tincroft, South Crofty, and East Pool, and on the west by North Crofty and South Crofty. There are on the mine a pumping engine, 36-in. cylinder, with two 8-ton boilers; drawing engine, 24-in. cylinder, with one boiler of 9 tons; capstan, with 250 fms. of new 11-in. rope, shears and pulleys, also new. The engine-shaft has been repaired, and divided to the 30, and the engine is now forking the water under the 45 with 8-in. pumps and 7-in. bucket; this shaft is sunk to the 125, under adit, and is perpendicular to bottom. Mayne's shaft has been sunk to the 115, under adit, on the course of a lode. Reynolds's shaft has been sunk to the 115, under adit, on the course of another lode. Square's shaft has been sunk 30 fms. under adit, and is now in course of being enlarged and repaired; this shaft is being sunk on a cross-course. A cross-course has been driven at the 70, on the cross-course, 110 fms. south from the engine-shaft, and eight lodges have been cut, but no driving work mentioning has been made on either of these lodges. There are three cross-roads in the sett—one in the centre, which renders the opening up of the ground much easier, and by far more speedy and inexpensive than it could otherwise be; another on the eastern boundary, and the third in the western boundary of the sett. From the middle cross-course, on which Square's shaft is being sunk, to the western cross-course (about 100 fms.) nothing has been done to prove the ground on either of the eight lodges which are intersected in the 70 cross-cut, and the same may be said of these lodges between the middle and the eastern cross-courses. Indeed, only three lodges have been worked on in the sett out of eleven which have been cut; two of these wrought on have been very productive. Between these cross-roads in a parallel stratum of ground, of precisely the same character; great deposits of ore and tin have been made in Dolcoath, Cook's Kitchen, North Crofty, North Crofty (formerly part of East Crofty), and to the west of the western cross-course in Wheal Seton. The fact must not be lost sight of that the north lode in Cook's Kitchen, which has been very productive in that mine, and rich in Tincroft, will be from the underlie in this sett at about the 130 to 200 fathoms long. The water is forked down to the 50, under adit, and we are forking at the rate of from 3 to 4 fms. a day. I propose to drive level on a south lode from a cross-cut which has been driven from the engine-shaft 35 fms. south at the 45, where two lodges have been cut; these appear to be coming together going westward, and will form a junction near one of the eleven-courses, and there is every reason to expect a good course of ore at this place. To drive also the 24, east from Square's shaft, on the same lode, where the lode is composed of mundle, gossan, and peach, intermixed with copper ore, altogether a very promising lode. To drive also the adit level west on the Copper Tankard, through the great cross-course; the lode here is 3 ft. wide, composed of spar, mundle, jack, gossan, and prlan, with good stones of copper ore. To drive the 24 west on an arth lode, through the great cross-course. To sink Square's shaft with all possible speed to the 70, to communicate with the mine, and to discharge the water. To discharge the water, which will enable us to prove effectually the west and south parts of the mine. Now that the engines are at work several tribute pitches will be set at once. In this report I have only mentioned some of the work already done, which is necessary for prosecuting the mine. The engines are in good repair, the water charge light, 8-in. pumps being only required to keep the water and to sink under the 125. I have never met with a mine on which a number of adventurers have entered with better chances of early and profitable returns.—HENRY SKEWES.

Mr. J. ELLIOT SQUARE said he felt sure that everyone who had heard that report would agree with him that it was indeed rare for a body of shareholders to come into a concern with such prospects. Besides the extensive sett they had already secured, they had also applied for small portions of ground now included in Dolcoath and North Crofty setts—ground which, although of little or no value in the mines in question, would be of great importance to them—and which he hoped they would, in due time, succeed in getting. Next to the mine itself, he thought the shareholders had reason to congratulate themselves on having succeeded in securing the services of Mr. James Lanyon as their purser. The position which Mr. Lanyon occupied in the county, as principal mineral agent to Mr. Bassett, the greatest mining proprietor in the western counties, was a guarantee not merely of his efficiency for the office, but also, in his (Mr. Square's) opinion, no slight evidence of the estimation in which the future prospects of their mine were held by those who, of all others, had the means of arriving at a correct judgment. Mr. WILSON said he had a mine in a good and efficient working order. As for the value of Mr. Lanyon's opinion with them. His own opinion of the mine, which he had formed on the advice of some of the most competent mining authorities of the county, was such as required no strengthening; but if he had known nothing of the concern before, he would have felt no hesitation in following where Mr. Bassett's principal mineral agent led the way. The point for them now to consider was their financial position; and, with this object, he called upon Captain Skewes to inform the meeting as to about what their costs would be for the coming quarter.

Capt. HENRY SKEWES: I stated in my report, just read, that since we have had the mine, the engine-shaft had been repaired, and divided; the engine put in thorough order; a large stock of new pitwork laid in; a new capstan, shears, &c., with a new capstan-rope got in place; and a large amount of miscellaneous work done, involving a considerable consumption of materials. The greater part of this work—which may be considered as preliminary work—is already done, and I do not estimate that we will require more than 200l., in addition to what we have already spent, to put the mine in thorough working order. When this has been done we have only the current monthly cost to meet, which will be slight, for our merchants' bills will then only be trifling. Labour in driving levels will be the principal item, for all the heavy and expensive work has been done by our predecessors. In another month, and with the expenditure of 200l., I have named, we have a mine in a good and efficient working order, as need be. For our current cost I estimate that 600l., beyond our returns, will be amply sufficient to carry us through the quarter.

Mr. WILSON: It is now for us to consider what call we shall make to meet this cost. Mr. SALMON: The regular Cornish system of conducting mines is not to make calls in anticipation, but first to incur the cost, and then to divide it. I do not want now to discuss whether this is, or is not, the best system; but such is the system of most respectable conducted mines, and under it you would require no call until the next meeting.

Mr. WILSON: I have no greater wish than Mr. Salmon to discuss the general merits of the Cornish system of conducting mines, which is first to spend the money, and then to call it up, but in our case I most certainly object to such a system, which I think is nearly fair to incoming shareholders. My notion is to make such a call to-day as shall carry on the mine for three months, including all extra cost, and leave us a balance on the credit side when we meet again.

Mr. HAWKE: I quite agree with Mr. Wilson that we should make our calls in ant-

icipation, and that in this case we should make an ample one to leave us a credit balance at our next meeting.—Mr. GLUBB and Mr. CLOGG having concurred in this view.

Mr. LOCOCK WEBB proposed a call of 5s. per 1-600th share, which would provide 1500l.—a sum fully ample for all purposes. Mr. HAYLE seconded this motion, saying he quite agreed with the propriety of making calls in anticipation. In so doing, they were making a great deal more than what they could, by which liabilities, which ought to have been paid long before, came on the last holder. He was sure shareholders in mines would gain more in the value of their property by the increased confidence the public would have in it, by making calls in anticipation, than they saved by postponing them.

Mr. SALMON had no objection to making calls in advance, which was, no doubt, a sound principle. He had merely pointed out that the contrary was the usual practice. A call of 5s. per 1-600th share was then agreed to.

Capt. PASCOE (of South France), Mr. J. LANTAS (purser), Capt. BENNETT (of North Crofty), and Capt. HENRY JAMES, having expressed their opinion as to the value of the ground and the peculiar circumstances under which it came into the hands of the present adventurers, the meeting broke up.

EAST WHEAL RUSSELL MINING COMPANY.

A special general meeting of proprietors was held at the offices of the company, 8, Austin Friars, on Monday, Mr. EVAN HARRIS in the chair.

Mr. J. H. MURCHISON (secretary) read the notice convening the meeting. The CHAIRMAN said the proprietors were aware that the object of the present meeting was to receive and consider the reports of Capt. Charles Thomas (of Dolcoath) and Capt. George Rowe (of Wheal Edward). It would be recollected that at the last meeting those agents were chosen to inspect the mine, and to report upon its general prospects and the manner in which it is being developed.

Capt. Charles Thomas's report (referring to the way in which the mine had been opened) states that the past operations since his visit to the mine, some three years ago, have been carried out with great priority, manifesting clearly that prudence and sound mining judgment have been exercised, with due regard to economy; attention having been paid to exploring mainly the run of ore ground, about 30 fms. in length, mostly worked away from the 40 to the 110 fms. level, and also using a portion of the available lode in extending the 45 and 55 fms. level eastward from the tunnel towards extensive old surface workings in that direction; in driving the 88 west, by way of trial, and now in cross-cutting north towards the lode seen at surface; and also in cross-cutting through all the parts of the lode about Homersham's shaft, and eastward from it, wherever a moderate prospect of success or a fair speculation presented itself. Upon this point Capt. Thomas concludes by saying—Indeed, I highly approve of the way in which the mine has been worked hitherto. As regards the future plan of working, Capt. Thomas states if the mine had been in a prosperous condition, supplying from its own resources sufficient funds, he would continue all the works just as at present; of course, stopping the 120 fms. level cross-cut, near the shaft, and the 110 fms. level cross-cut, both of which have entered the killas, and would increase the number of men in the 120, east of Viger's cross-cut, and in the same cross-cut going further north from four men at present to six men in each place; and sink a winze from 110 to the 120 as soon as practicable. Four men should also be kept driving the 110 east and west, according to circumstances, at the discretion of the agents. He recommended this course on the ground that it is generally desirable to the well-being of the mine to confine the operations to those parts which will almost assuredly lay open ore of value. Some speculative works on parts offering only some moderate chance of success should also be carried on, just as is done at present—two men in each of the ends on the east and west from Maynard's cross-cut. If, however, strict economy is resolved on, the driving of the 120 east and west from Maynard's cross-cut and the driving at the 110 west may be suspended for further working, as far as may be judged advisable after the communication is made from the 110 to the 120 fms. level.

The report of Capt. Rowe, after enumerating the various points of operation, concludes by saying—The mine is in a good position, and should be continued with as few hands as the nature of the works will admit.

A letter from the agents (Capt. J. Richards and J. Goldworthy) concludes as follows:—"This approval of the workings of the past is followed by recommendations for the future development of the mine, which are as nearly as possible in accordance with the plan we have always had in view, and contemplated carrying into effect, and which we hope will lead to such discoveries as will place the mine in a profitable position."

The CHAIRMAN said that Capt. Richards was present, and would be very glad to afford any further information that shareholders desired.

A SHAREHOLDER did not think any further explanation could be needed, seeing that shareholders now had the opinions of Capt. Charles Thomas and Rowe, and that the mine was not only being properly worked, but that its prospects were encouraging.

Capt. RICHARDS stated that he considered the prospects, particularly in the eastern part of the sett, were very cheering, where an improvement had recently taken place in the rise above the 45 fms. level. He was impressed with the belief that something very valuable would be met with at that point—appearances warranted that assumption.

Mr. ROSEWARNE said the reports of Capt. Thomas and Rowe bore out the statements which he made at the last meeting—that four men could not do as much work as six, which meant six or eight, instead of four. Capt. RICHARDS said he would merely reiterate the opinion he had hitherto expressed—that, under certain circumstances, four men could do more work than six. Where six men would be advantageously employed it was done.

Mr. ROSEWARNE enquired if there were full paces of men in those levels referred to in the reports of Capt. Thomas and Rowe.—Capt. RICHARDS said in most of the places six men were employed—in fact, all the places were they could be put to work with advantage; but where four men could do the work of six, four men were employed.

Mr. ROSEWARNE said he referred specially to those points which must be pushed on with vigour.—Capt. RICHARDS said he could only repeat that wherever six men could be advantageously employed it was always done. If six men were employed where now there were only four they would work to a disadvantage; in fact, if more staff were broken it could not be hauled to surface.

Mr. ROSEWARNE asked in what manner the stuff was hauled?—Capt. RICHARDS said skips were used at the eastern and kibble at the western shaft. The eastern ground was very easy. When he said it would be difficult to haul more stuff to surface, he did not refer to ore, but to refuse.

Mr. ROSEWARNE enquired if the lode had been seen on the other side of the cross-course?—Capt. RICHARDS replied that the lode had been seen on the western side of the cross-course, and it was precisely of the same character as it was on the eastern side.

A PROPRIETOR enquired if the quality of the ore was good?—Capt. RICHARDS replied that the quality of the ore was very good, especially in the 45 rise, the produce being 5 1/2. The cross-course, which was about 4 feet wide, dipped rather eastward.

Mr. ROSEWARNE enquired if the 45 was not up to the turn of the hill, and whether gossan had not been found in the 120?—Capt. RICHARDS replied that the 45 was about up to the turn of the hill, and in the western mine gossan had been found. He believed the gossan would have the effect of improving the lode in depth. They were not quite up to the second bench of ore.

Mr. ROSEWARNE said the level above the first bench of ore was worth about 30l. per ton, and he was only to be hoped that the second bench of ore would make up for the two—the one that they ought to have had, and the one that they had.

Mr. PROCTER said it was satisfactory to find that the mine had been, and was being, worked in an efficient way.

The SECRETARY, in answer to a question, stated the arrears of call did not exceed 70l. at the last general meeting.

A resolution was unanimously passed to the effect "That this meeting refer with much satisfaction to the reports of Capt. Charles Thomas and Capt. George Rowe, and are pleased to find that the plan carried on by the agents is highly approved of."

A vote of thanks to the Chairman terminated the proceedings.

LADY BERTHA MINING COMPANY.

A meeting of shareholders was held at the company's office, St. Helen's-place, on Thursday, Mr. URRON in the chair.

The usual preliminaries having been disposed of, the agents' report and the statement of accounts were read, of which the subjoined is an abstract:—

Balance last audit	£ 345 6 0
Balance	847 19 6
Carriage	42 8 3
Calla received	873 14 8
Labour cost	1137 17 7
Drifts	276 7 2
Merchants' bills	294 10 6
	1045 15 3
Leaving credit balance	£ 145 13 1

July 21.—We beg to hand you the following report of the present appearance and future prospects of this mine for the forthcoming quarterly meeting:—In the 88 west the lode when last cut into was from 3 to 4 ft. wide, composed of quartz, mundle, and good stones of ore. We are at present driving by the side of the lode, through moderately easy ground, with four men. Our principal object for driving this end is to get in under and under water a stop at the bottom of the 40 west, where the lode is worth quite 10l. per fathom. The distance we shall have to drive to accomplish this will be about 8 fms. In the 41 east the lode is about 3 ft. wide, consisting of mundle, peach, and ore—sparing work. From the dip of the shoots of ore in the levels over this we may reasonably expect an improvement in this end shortly. We have here employed six men. In the 41 west we have a pitch in operation, where the lode is large, composed of mundle, quartz, and ore, worth of the latter 4 tons, or 12l. per fm. The portion of the lode in the 30 east, on which we are just now driving, is small, composed of peach and mundle, intermixed with ore; driving by six men. The lode in the winze sinking below the bottom of this level is very much improved since our last report: it is about 3 ft. wide, composed of quartz, mundle, and ore worth of the latter 4 tons, or 12l. per fm. sinking by six men. In a pitch also in back of this level the lode is looking better, being over 3 ft. wide, composed of mundle and ore, worth of the latter 4 tons, or 14l. per fm. In the tribute department the pitches, on the whole, are looking better, having five in operation. At the new eastern shaft we are down rather more than 40 fms. from surface, through a very congenial stratum of ground for the production of mineral. This shaft is being sunk by nine men, with all possible dispatch, knowing, as we do, the importance of accomplishing the communication with the 30 as early as possible, having about 4 fms. more to get through. From a reference to the plan it will be seen that the whole of the shoots of ore in the mine, so far as we are dipping eastward towards the shaft, are supplied with the position of the great cross-course underlying west towards them, cause us reasonably to anticipate that the sinking of this shaft will, in depth, prove satisfactory. The new wheel-pit is nearly completed, when the seasons will commence building the walls. Our wheel and pitwork are all in good working condition, and keeping the water out of the mine easily. We have employed in all throughout the mine 80 persons. We would observe, in conclusion, that due regard shall be taken respecting the expenditure consistent with the proper development of the mine.—F. C. HARRIS, J. METZGER.

The CHAIRMAN, in moving the reception of the report and accounts, remarked that at the date of the last meeting the deficiency was 818l., which amount had been met by the call; there was now a deficiency of 1183l. to be provided for, which would require a call of about 4s. per share. The committee had done all in their power to lessen expense, and from what he ascertained from the captain when he visited the mine he believed that in future the monthly cost-sheet would be reduced to 300l., instead of 500l., as it had been. They had reduced expenditure also in many other ways. He should observe that they had been put to some extra expense during the past few months owing to the influx of water from Tavy Conals Mine. He believed that when the lowest level was further advanced they would meet with no difficulty whatever from that source. Upon his visit to the mine a week since he found all going on as well as could be wished; but the principal thing that attracted his attention was the new shaft, which was of great size, and constructed in the best possible manner. That shaft was now 40 fms. down, and it would be requisite to sink it 40 fms. deeper. In six months from the present they might expect better results. For the present the sales of tin and copper would certainly be small, for the ends were not in a very productive state; but upon reaching the cross-course they would probably meet with something good. In

the meantime, however, calls would, of course, be necessary. He concluded by moving that the report and accounts be received and adopted.

Mr. STEEL also visited the mine, and was much pleased with what he saw there, because everyone really seemed to be fully at work. He quite agreed that their great point was to reach the cross-course. The killas was of a fine blue colour, and very good for the inspection of ore, so that, although they were at present compelled to make calls, he considered their prospects fully justified there. He saw no reason to lessen their hopes that they would ultimately meet with good success.

Mr. LEATHERHEAD enquired whether two captains were necessary?—Mr. STEEL considered they were. Capt. Harpur had always shown the greatest amount of solicitude, and visited the mine twice a week. He thought it always better to have two captains.

Mr. PETER WATSON concurred. It was generally the practice to have a superintendent as well as the agent. With regard to the working of the mine, he considered driving eastward towards the cross-course to be very important. For the last three months comparatively little had been done, but he believed that they had good prospects during the coming three months, more especially when they considered that from where they anticipated the improvement they would have all the ground in surface. They must recollect, too, that although it was said the 30 there was in fact, from its being driven into the hill, 50 or 60 fms. between it and the surface. As they had had good success of ore going down, he thought their prospects were excellent. The killas was much better than in the eastern shaft, as to the accounts, he believed that no mine was charged-up better, everything being included to the end of June.

Mr. LEATHERHEAD complained that the committee had much reduced their interest since they took office, and considered that they should at once resign their seats. Mr. HARRIS would be quite willing, and he had no doubt, the other committee would act with him, to resign his seat, if any other shareholder could be found to accept the office.

The SECRETARY said that sufficient calls had been made at each meeting to pay off all debts due at the time.

Mr. PETER WATSON said that it was with the shareholders to elect a committee, but after they had elected them he did not think they ought to say whether they should sell or buy shares. There was no fixed qualification for a committee.

Mr. LEATHERHEAD did not refer especially to the individuals, but to the system generally. He considered that if a committee or director of a public company lost anything from his connection with it, it could only arise from bad generalship on his part.

Mr. PETER WATSON thought that if the directors were damaging their property Mr. Leatherhead's remarks would be justifiable, but as they were not he should certainly propose their re-election.

A call of 3s. 6d. per share was then made, the committee was re-appointed, and a vote of thanks to the Chairman terminated the proceedings.

WEST CHIVERTON MINING COMPANY.

A meeting of the adventurers was held at the mine on Thursday, Mr. E. BURGESS in the chair.

The agents' report and statement of accounts for the three months ending June, of which the subjoined is an abstract, were submitted:—

Ore sold	£2327 7 8
Mine costs, three months	2874 1 10
Leaving balance, being profit	£2353 5 10

July 23.—Williams's Lode: In the 50, west of cross-cut, the lode is 10 ft. wide, worth 70l. per fathom for lead; in this level, east of cross-cut, the lode is 10 ft. wide, worth 70l. per fathom for lead. The 70 is driven east of Suanam's shaft 35 fms.; the lode in the end is 1 ft. wide, unproductive. The 70 is driven west of Suanam's shaft 35 fms.; the lode in the end is 3 1/2 ft. wide, worth 35l. per fathom for lead. A winze is sinking below the 70, west of Suanam's shaft; it is down 9 ft., in a part of the lode which is 4 ft. wide, worth 50l. per fathom for lead. A rise above the 70, west of Suanam's shaft, is worth 10l. per fathom for lead. We have four stops in back of the 70, on this lode, which are worth on an average 25l. per fathom. The 60 is driven east of Suanam's shaft 41 fms.; the lode in the end is 2 1/2 ft. wide, composed of soft spar, with stones of lead and blende, with a very kindly appearance. A winze is sinking below the 60, west of Suanam's shaft; it is down 3 1/2 fms., on a lode worth 20l. per fathom for lead.—Elizabeth Lode: The 70 is driven west of Suanam's shaft 35 fms.; the lode in the end is 9 ft. wide, worth 45l. per fathom for lead. Two stops in back of this level are worth on an average 20l. per fathom for lead. The 60 is driven west of cross-cut 15 fms.; the lode in the end is at present unproductive; this level has opened up some good lead ground. We are cross-cutting in the 50 towards this lode, and think we have about 4 fms. to drive to intersect it, which we hope to accomplish in about six weeks from this time. We are also cross-cutting south in the 40, west of Suanam's shaft, to prove if there is a part of Williams's lode gone off south. On Valby's lode we have two stops in back of the 70, which are worth on an average about 70l. per fathom. We have opened about 50 fms. in this level; about 40 fms. of this driving has been through a good bunch of lead; consequently we look with confidence, and anticipate discovering a good and lasting bunch of ore in the 50. We expect to intersect this lode in 3 1/2 fms. driving south of Williams's lode. We are glad to say the mine never looked better than at the present time.—J. JULIFF, Jun.; R. NANCARROW.

NORTH ROSEWARNE MINING COMPANY.

A general meeting of proprietors was held at the offices of the company, 13, Cornhill, on Wednesday.

Mr. RICHARD TREDNICK (general manager) was voted to be the chair.

Mr. WHITMORE WATSON (the secretary) read the notice convening the meeting, and the Chairman submitted the rules and regulations for the government of the company, and the statement of accounts, ending with June cost, was presented, which showed a debit balance of 207l. 10s. 6d.

Mr. SHIMMINS (of Liverpool), in answer to a remark, stated that he had recently visited the property, and he could assure his fellow-proprietors that for the same amount of work done at North Rosewarne he had seen charged upon other properties four times the amount.

It was then resolved that the accounts, as submitted, be passed and allowed. Mr. J. S. PHILLIPS (the agent) stated that the appearance on the table he had himself taken from the mine. He did not think anything more encouraging for a permanently productive mine could possibly be met with in the whole county.

The CHAIRMAN said that the energy which had been displayed in sinking the shaft to its present depth was the most substantial and practical proof that he could adduce as to the manner in which the property would in future be developed, and its wealth explored. Upon this point, however, he would refer his co-proprietors to the following report, which he had the honour to submit:—

I have much pleasure in directing your attention to the reports and statements of accounts as submitted for approval this day. I have carefully considered the position and prospects of this mine, and have arrived at the conclusion that an expenditure of 2000l. under practical and vigorous management will result in the discovery of a valuable and profitable mine. In informing you that the sum of 207l. 10s. 6d. stands to the debit of shareholders at the close of June month, and that the erection of a steam pumping-engine has become imperative, it also becomes incumbent upon me to state that a call of 1l. per share must be made this day. As your general manager, I shall do my best to secure an early and inexpensive development of the property. I deem it also advisable to state that as all the shares of the company are subscribed for and distributed in full, the future commercial value of the property will rest upon the unanimity and support afforded to the undertaking by those now interested therein.—R. TREDNICK.

The report of the agents was then read, as follows:—

July 20.—Since operations have been commenced at this mine we have cleared the shallow and deep adits from the west and east, and sunk various shafts on the several lodges for general exposition of their merits; and having selected the No. 6, or Webber's, and the large No. 3 lodges for immediate development, Shimmin's new engine-shaft has been sunk on the former, and immediately timbered to 13 fms. 3 ft. from surface, to cut the lode at the 40 under adit, the first 9 fms. through an elvan course, the remainder through a mineralised clay-slate stratum, and a small quantity of copper, and a face of chlorite, indicative of the quality of the lode, even at 9 fathoms distance in stratum. Some considerable difficulty has been overcome in clearing the deep all through and from Duffield old mine, from having to clear up two 20 fms. level adit shafts to ventilate, raise and clear stuff from the level, so as to arrive at a convenient place to drive westward on No. 3 to the cross-course, which so improved Webber's lode in consequence. We are, however, doubly rewarded, by having the easy driving of 24 ft. per fm., and a beautiful lode about 3 ft. wide, underlying north 13 ft. per fm., and thereby forming an important junction with Jennings's lode in depth, the dip of this intersection being westerly towards the cross-course in depth. The composition of the lode in the present end is 1 1/2 ton of mundle per fm., with an abundance of quartz, prlan, and peach, spotted and faced with copper, and to use an expressive miner's phrase, "contains all but copper," and is so much superior to No. 6, at the same distance from the cross-course, that we really anticipate a discovery in this level before many months of labour in this direction. In conclusion we can say that, however sanguine the weekly reports, the indications have fully justified those remarks, and that, as after the engine has been erected a few months will prove us right or wrong, we confidently await the result, and, therefore, advise you to erect a 43-in. engine for pumping immediately to command the water from our engine-shaft and throw pumping-rods to the No. 3 lode, if required to sink on it below the adit level.—J. S. PHILLIPS, JOHN TRACKE.

The CHAIRMAN said that Mr. Phillips would be glad to answer any questions, either as to the position of the property or as to its prospects.

Mr. CORLIFF enquired how long it would be before the ore was reached? Mr. PHILLIPS replied that if an engine, which he believed it was proposed to purchase, were now on the mine, and in working condition, it would take between two and three months before the lode was cut; and if an engine were erected forthwith, he confidently believed it would not be more than five or six months before a course of ore was met.

A resolution was then passed to the effect that the reports of the general manager and agents were considered satisfactory, and that they be entered upon the minutes.

well that offered such unusually favourable prospects as North Rosewarne. He had not only carefully examined the property, but he had minutely inspected its mineral lodes, which he found to contain all those constituents that a miner regards as an unmistakable evidence of the opening up in depth of great mineral wealth. He could assure the proprietors that it would be the constant aim of the executive to bring about a successful issue in the least possible time, and to provide the means for the purchase and erection of a suitable engine, which would be enabled to develop the property to its united satisfaction, and he hoped to their united and permanent profit. So much trouble had he taken in thoroughly investigating the yet undeveloped merits of this property, and so perfectly convinced was he that success would be achieved, that, if the results which he anticipated were not realised, never again would he express an opinion with regard to any mine, for no longer could those various circumstances now held to be the prima facie essentials to the success of a mine be regarded as such. He did not wish it to be inferred from these remarks that he for one moment contemplated other results than the most satisfactory, but merely to convey to the meeting his confident opinion as to the intrinsic merits of the North Rosewarne Mine. The meeting then separated.

ABERFROD MINING COMPANY.

A general meeting of proprietors was held at the offices of the company, 18, Cornhill, on Thursday.

Mr. RICHARD TREDDINICK (general manager) in the chair.
Mr. J. W. WATSON (secretary) read the notice convening the meeting.
A statement of accounts was submitted, which showed—Mine cost for the four months ending with June, 1863, £4, 8s. 6d.; sundries, stationery, postage, stamps, &c., for eight months, 12s. 10s. 3077. 0s. 8d. Balance last audit, 21s. 6s. 10d.; leaving debit balance, 28s. 12s. 10d.

The SECRETARY then read the report of the manager, as follows:—
July 23.—In handing you this day my report of the Aberfrod Mines, I have much pleasure in congratulating the proprietors upon having obtained the lands belonging to the Aberfrod Mines. This acquisition to the company's grant is important, as the discoveries made at the latter mine exist close to the boundary line, and most unquestionably dip westward into the Bonaill sett. I annex Captain Williams's estimate of the discoveries made at Nanteos.—June 13: I think the lode is worth 1 ton of ore per fathom, which will produce from 20s. to 25s. per fm., and on calculating on 60 fms. long we have discovered from 13,000s. to 16,000s. worth of ore. It will be found that there is a difference of 3000s. to 4000s. in the estimate; this might be expected, inasmuch as it is impossible for the most experienced person to detect the percentage in silver in the stone, some of the lodes producing 15 ozs. of silver to the ton of lead, and others 100 ozs.; but the estimates from the different agents agree sufficiently well for all purposes of practical mining. From my first inspection of this lode I was led to believe, from the indications presented, that the course of ore opened upon so near the surface was the precursor of an immense deposit of rich ore. In this my opinion has been fully borne out by the development of the mine. The section shows the position of the wheel, &c., as it will be when in full operation. It is with confidence in the future that I meet the shareholders this day, and I trust the time is not remote when I shall be enabled to submit to them a complete statement of the progress of the mine, and the results of our immediate neighbourhood. I would suggest that a call of 1s. per 600th share be made, 28s. 12s. 10d. of which is already expended, and that the shares in future be subdivided into 6000, instead of 600 as heretofore.—R. TREDDINICK.

The CHAIRMAN having moved the adoption of the report and accounts, drew attention to the favourable geological position which the property of the company occupied, being immediately contiguous to the Nanteos Mine, where there had recently been made such valuable discoveries. Although it was true that up to the present time the operations at Aberfrod had been of a limited character, yet already a thread, or more properly speaking, a branch of silver-lead ore had been intersected; that branch was being driven upon, and in a few fathoms the same lode would be reached which in Nanteos had proved of such value. Of course, he could not positively say that the same satisfactory results would be achieved in Aberfrod, but seeing that the position of the mine was so favourable, and that it possessed the same strata, and that it formed a portion of the direct line of the metal-bearing bands, it was by no means an unjustifiable assumption that as soon as the property had been sufficiently opened results would be realised that would render Aberfrod of equal value to Nanteos. As regards mining in Cardiganshire generally, it appeared to him that non-success invariably arose either from inadequate capital, or from inefficient development; but as long as he had the honour of occupying the position of general manager, it would be his pride, no less than his duty, to see that while, on the one hand, the property should not suffer from want of the necessary capital to develop its resources, yet, on the other, the utmost economy, compatible with efficiency, should be exercised in every department, and he hoped by the continuance of such a course to ensure a great and permanent success. As regards the financial position of the company, it had been seen by the statement of accounts just submitted, that at the last meeting there was carried forward a small credit balance. Since that time, there had been incurred a liability amounting to 3077, which was, in fact, the four months' costs from March to June. The actual financial position of the company at the present time, therefore, was a balance to the debit of 2884. To liquidate that amount, and to provide for the future development of the property, it would be necessary to make a call, as had been suggested in the report which he had just read. The amount therein mentioned was not, he thought, a suggestion, as none but the shareholders present could settle that question; therefore, he would leave it entirely to the meeting to decide.

The adoption of the reports and accounts having been duly seconded, the motion was put and carried unanimously.
A discussion ensued as to the advisability of subdividing the shares of the company, the number having hitherto been 600. It was eventually unanimously agreed (upon the proposition of Mr. W. G. VIVIAN, seconded by Mr. PHILLIPS) that the shares be divided into 6000.—Mr. MILNE suggested the propriety of making the proposed call payable in two instalments, and that a rebate should be allowed on all calls paid on or before a specified day.—A call of 4s. per share was made, payable in two instalments, a discount of 5 per cent. to be allowed if paid on or before Aug. 1.

Mr. P. G. GREVILLE was appointed the solicitor of the company.
A vote of thanks to the Chairman having been passed, the proceedings terminated.

DUN MOUNTAIN COPPER MINING COMPANY (LIMITED).

The half-yearly general meeting of proprietors was held at the London Tavern, on Wednesday.—Mr. ARNOLD ROGERS in the chair.

The notice convening the meeting having been read,

The report of the directors was submitted, which stated that—"In the last report issued to the shareholders your directors stated that chrome ore was steadily arriving into this country, and that they were in expectation of finding a permanent and profitable channel for its disposal. They also expressed a hope that the funds provided by the obligation bonds would be sufficient to meet all the liabilities incurred by the company prior to the cessation of expenditure at Nelson. The directors have now to report, with respect to the sale of chrome ore that although the market for this mineral and its chief product, bichromate of potash, is monopolised both here and abroad by a few manufacturers, and notwithstanding the continuance of the depression of trade consequent on the American war, they have succeeded in selling about 1400 tons of the product, and have raised the amount required to pay the obligation bonds, have been required to meet the current expenses and liabilities of the company. With regard to the cessation of expenditure at Nelson, the board have to state that, by the last Nelson advice, all the liabilities of the company are said to have been discharged, and that, in accordance with the instructions of your directors, operations at the mines were suspended. The railway, plant, and property, however, were all in good working order, and available for any further mining work as soon as instructions to resume the same should be received. Since the meeting, in January last, the reports received from Mr. FITZGIBBON, the manager, have been rather of a conflicting character, relating to the chrome workings, which in some of such reports are said to be "falling off," and the lode "rich," and "irregular," and he strongly recommends an additional line of railway to be constructed, at an estimated cost of 4000s., so as to enable him to work the chrome reef referred to in the January report as situated at a level of 500 to 700 ft. below the present workings, by which means he estimated that 2000 tons of chrome annually could be relied on. These statements, however, have not been accompanied by any measurements or working statistics, so as to enable your directors to form any judgment upon their probable accuracy. There remain about 2180 tons of chrome ore on hand, which your directors have reason to believe they will shortly be able to dispose of, remunerative prices. With regard to the present position and future prospects of the company, the directors have reason to think that the chrome stratum lies in great strength; but, in the absence of measurements, they are unable to form any correct estimate of the extent or value of the lode; but, if, after a thorough miner-like exploration, our chrome deposits are proved to be what the directors are led to expect, they are induced to believe that a satisfactory arrangement can shortly be made for the permanent sale of their chrome at remunerative rates. In conclusion, therefore, taking all the circumstances of the company into consideration, the directors are of opinion that a practical mining captain should be dispatched to Nelson, with as little delay as possible, in order to ascertain the true value of the property, whether as regards chrome ore or other minerals.

The directors have to notify that your late secretary, Mr. Fredk. Saunders, resigned office on June 30, and they avail themselves of this opportunity to express their high appreciation of his long and valuable services. They have succeeded in engaging as his successor Mr. William Henry Thornthwaite, of 121, Newgate-street, a gentleman well known as a practical chemist, and whose particular qualifications will, no doubt, prove most advantageous to the company in its present position.

The CHAIRMAN said that the report just read contained really the whole of the information which the directors had to lay before the proprietors. It showed that at present the company was affected by the general distress which prevailed in the cotton manufacturing districts. There had been received 4000 tons of chrome ore, and if the same price now ruled as had been obtained prior to the American war the company would have received for the 4000 tons of ore the sum of 40,000s. As stated in the report, there remained about 2180 tons of chrome ore on hand, which had been proved to be of very rich quality, worth at least 10s. per ton. It was patent to them all that the more successful any undertaking was the greater were the difficulties at the outset; but so far as this company was concerned, very important alterations would be endeavoured to be made, and arrangements effected for the cheap extraction of the ore, and also for ascertaining its actual value when it reached this country. In connection with the sales effected some extraordinary facts might be mentioned—a small quantity, perhaps 600 tons, had been purchased by parties who tested its quality, and had prejudiced the purchasers, but who subsequently purchased 1000 tons more, without ever having seen it or tested its quality, but which the company was obliged to sell to obtain the necessary funds. Other sales had taken place under precisely similar circumstances. At the present time there was quite sufficient demand in this country to consume twice as much chrome ore as was brought into it. As to the financial position of the company, he was glad to say that, according to the last advice from Nelson, there were no further claims, and it was hoped and believed that the amount realised by the sale of the firewood from the company's estate would nearly, if not entirely, meet the whole of the expenses during the continuance of the present limited operations. It was the intention of the directors upon the present occasion to obtain the consent of the proprietors to send out a thoroughly practical mining captain, so that some reliable data might be gained not only as to what quantity of chrome ore could be depended upon to arrive periodically in this country, but also to ascertain the actual mineral resources of the company's property. As soon as the ore on hand had been realised the directors would be in a position to send out such a person. It would be no disparagement to Mr. FITZGIBBON for him to have been the person whom the directors had sent out to Nelson, and he was not averse to the further exploration of the property. That a practical mining captain should be sent out was the more necessary, seeing that there were so many gentlemen interested in the company who believed that the property contained not only chrome ore in great richness and in great abundance, but also other minerals which might be remuneratively developed. For these reasons the directors suggested that as soon as convenient they should send out a practical miner, who could thoroughly ascertain the value of the property, and report upon

its prospects as to future results. He was the largest shareholder, and he was determined to bring about, if possible, a successful issue. He had every confidence in the committee at Nelson, but there must be some sort of supervision where needed, to see that the utmost economy was exercised, and to arrange contracts. The proprietors were aware that the directors had good reason to believe that a permanent and profitable channel for the disposal of the ore had been found, but from prudential motives he would not at present further allude to that matter. He concluded by moving the adoption of the report and accounts.

Mr. TREDDINICK seconded the proposition. He might mention that the auditors, in common with the directors, declined to receive anything for their services until the proprietors had received a dividend. There was no doubt in his mind that eventually the chrome ore would produce large and permanent profits.

The report and accounts were received and adopted unanimously.
Mr. R. T. P. FARRER said he was an original shareholder, and he had the greatest confidence in the ultimate success of the undertaking. There were few companies the directors of which had conducted the affairs for seven years without remuneration for their services.—In fact, he had declined to do so until the proprietors had received a dividend. He concluded by moving that the best thanks of the meeting be given to their worthy Chairman and directors for their past services.

Mr. GODDARD said that the proprietors were deeply indebted to their directors for the self-sacrificing way in which they had acted; and seeing that they continued to hold their large interest through the many difficulties which had surrounded the enterprise, he thought the proprietors could not sufficiently express their thanks. He had much pleasure in seconding the proposition, which was put, and carried unanimously.

The CHAIRMAN, having acknowledged the compliment, said he had never bought nor sold a share since he first took his large stake—whatever had been allotted to him he had taken, because he held largely he had to take largely. He assured them that the board would continue to do their best to bring about those results which had been so long deferred, good and permanent dividends. He could not allow the meeting to separate without stating that the board of directors felt that they could not accept the resignation of their late secretary, Mr. Saunders, without expressing to him their appreciation of the valuable services he had rendered the company during a period of unusual difficulties; and that the directors were sure that the proprietors would, with pleasure, record the name of each long and efficient services.—A unanimous vote of thanks was passed to Mr. Saunders.

Thanks having been voted to the auditors, the proceedings terminated.

AUSTRALIAN AGRICULTURAL COMPANY.

The annual general court of proprietors was held at the offices of the company, No. 5, Cannon-street, on Tuesday.

Mr. E. HAMILTON (the Governor) in the chair.

The notice convening the meeting having been read, the report of the directors (an abstract of which appeared in the Journal of last week) was taken as read.

The CHAIRMAN said there could be no question that the results of the past year's operations were very unsatisfactory; but, if the report showing those results was disappointing, he begged them to believe that it was deeply mortifying to those who had presented it. It ought not to be a matter of surprise that the out-turn of 1862 had been so small, for it was within the knowledge of those present that during that year the colliery was for nine months either partly or entirely idle. It was also known that competition had been depressing them for many years, that local capitalists had opened out new collieries, and had entered the field against them on unequal terms; and that the directors, being for the most part merchants of great local influence, had been able not only to dislodge them (the Australian Agricultural Company), but had introduced their coal into ports that were to them inaccessible. But Mr. Winslip says if he had raised the same quantity of coal during 1862 as during 1859—130,000 tons—there would have been a saving effected by the reduction of wages, and by the generally improved state of the colliery, of not less than 10,000s. Through the alterations which Mr. Winslip had effected the cost of draining the pits had been reduced to less than 2000s. An extensive horse-railway had been laid, and the underground works were not to be surpassed by any colliery in this country. The works had now been opened to a considerable distance in different directions, and it was found that the only variation was that the seam increased in thickness and improved in quality. In twelve months the whole of the colliery would be in as efficient a condition as it was possible for any colliery to be. The possession of such a seam of coal, averaging in thickness from 9 to 10½ ft., and within two miles of a port of shipment, could be claimed but by few collieries. It would be a mistake for the proprietors to infer that the company was ill represented in the colony, for the report taken place during the past year could not be averted by any executive. With reference to the price of coal, the report states that the usual consequences of active competition and pressure on demand is a reduction of price, and the directors are fully prepared to hear that the superintendent had boldly adopted this course, not only as a means of increasing consumption in the colonies, but in order to encourage the shipment of coal to foreign ports. The manager's attention has been specially called to this subject, and, if he can manage to recover the quantity of trade formerly carried on, he will find that he will find some means of reducing charges, so as to leave a fair margin of profit. It appears to us that any alternative is better than the loss of customers by an attempt to uphold price, and that it is most important to us not to lose our position in the market. He (the Chairman) could not recall those expressions, and, therefore, it was incumbent on him to remove any erroneous opinions that might thus be created. It was not the fact that their prices differed from the advertised prices of other companies, but it was perfectly clear that in matters of price they were "dodged" by their competitors, for in more than one case he had reason to know coal was being sold at a less price than that advertised. They (the Australian Agricultural Company) had raised their coal at a very considerably reduced price—the profit per ton upon the coal raised during the first quarter of 1863 having been 3s. 6d. per ton against 1s. 4d. during the whole of 1862. A contract had been entered into for the supply of 4000 tons during the current year, and at a very satisfactory price. Having referred to the capabilities of the Warrah estate for the breeding of sheep, and having stated that he believed the company had seen the worst of its troubles, he concluded by moving the adoption of the report and accounts.

A PROPRIETOR enquired whether it was true that gold had been found upon the company's property? The CHAIRMAN said that, so far as he knew, at present there was no indication of gold. In answer to further questions, he stated that 10 instructions would be sent to Mr. Merewether to reduce the price of coal; but, at the same time, he had been told to inform his competitors, if they continued to sell their coal underhand at a reduced price, that he would openly reduce the price of the company's coal.

The report and accounts were received and adopted, and the retiring directors and auditors were re-appointed. A vote of thanks to the Chairman and directors terminated the proceedings.

ENGLISH AND CANADIAN MINING COMPANY.

An extraordinary general meeting of shareholders was held at the company's office, Devonshire-square, Bishopsgate, on July 16.

Mr. A. MORRISON in the chair.

At this meeting there were present shareholders representing 1896 shares.

After the usual preliminary business was disposed of, the CHAIRMAN informed the meeting that the annual general meeting called for April 30 had fallen through in consequence of a sufficient number of shareholders not being present to form a quorum. He then adverted to the reasons for calling the present meeting, one of which was to obtain the approval by the shareholders of the agreement for a sale to certain capitalists in Boston, U.S., of the Harvey Hill portion of the company's mine for 50,000s. sterling, and to see that the sale was carried out in London, the balance being due in the course of the ensuing month of August. The agreement between these parties and Mr. Stobart, one of the directors, who represented the company, was then read, when it was moved by Mr. ROBERT PORTER, seconded by Mr. GEORGE GLADSTONE, and carried unanimously, that the agreement in question be confirmed.

The CHAIRMAN then said that the next point to which he had to call the attention of the meeting was the necessity for making arrangements to liquidate the loan due to the company's estate, and to be immediately liberated from mortgage.

A resolution was carried, seconded by Mr. CHAMBERLAIN, seconded by Mr. JOHN L. BENNETT, and carried unanimously, fully authorising the board of directors to borrow the money required for the purpose of immediately effecting the annulment of the mortgage.

The CHAIRMAN observed that it was now his pleasing duty to propose a cordial vote of thanks to Messrs. William Stobart and Herbert Williams for their energetic, careful, and successful efforts in negotiating the sale of the Harvey Hill Mine. Mr. Stobart, he said, they all knew and esteemed, not only as one of the directors, but also as having for three years filled the office of honorary secretary. It was a great sacrifice on Mr. Stobart's part to leave his family and his various and important avocations, public and private, to cross the Atlantic and superintend the delicate and difficult affair of the completion of the sale. He congratulated Mr. Stobart and the company on the success with which his labours had been crowned. Mr. Williams was also well known and highly appreciated by the board and the shareholders as the talented and honorable superintendent of their operations in Canada since the commencement, and certainly without his able and prudent management and upright course of conduct the sale would never have taken place.—A resolution to the effect, proposed by the CHAIRMAN, was seconded by Mr. NEWELL, and unanimously adopted.

Mr. STOBART, in returning thanks on his own behalf and on that of Mr. Williams, said that no words of his could express the value of the sale of the Harvey Hill Mine in this important affair; indeed, none but himself, and Mr. Williams would ever know the difficulties they had had to contend with, nor the intrigues and wheels within wheels by which the affair had been complicated, neither were any terms strong enough to express the great obligations which the company was under to Mr. Williams for the zeal, tact, and prudence with which these difficulties had been surmounted. For his own part, he believed that he himself had been of great service in bringing the affair to a conclusion; indeed, Mr. Williams had on his (Mr. Stobart's) first arrival expressed his opinion that he was the very person most suitable for such a negotiation, and he was due the principal part of the success of the great success, and what he considered a subject for much thankfulness and congratulation. He hoped and believed that when the sale should be completed a new and brighter chapter in the history of the company would have been commenced.

It was then moved by Mr. J. W. MCLELLAN, seconded by Mr. GEORGE GLADSTONE, and resolved unanimously, that Messrs. Thomas H. Gladstone and Robert Porter be the auditors for the current year, and that the best thanks of the meeting be given them for their past services.

Mr. PORTER having briefly returned thanks, the meeting adjourned.

ANGLO-DANUBIAN STEAM NAVIGATION AND COLLIERY COMPANY.

The meeting of shareholders was convened for July 16, but, as we stated in last week's Journal, our reporter was refused admittance; we were, therefore, not able to publish the particulars of the proceedings, and only gave a series of resolutions which were to be moved thereat by Mr. J. L. Walker. A correspondent has forwarded the following statement as the result of the adjourned meeting on Thursday last.

The adjourned meeting of proprietors of the Anglo-Danubian Steam Navigation and Colliery Company was held on Thursday, at the London Tavern, under the presidency of Mr. John Kearns. The report stated that the expenses had been moderate, but that the directors had been placed in positions of great difficulty, on account of the attempts which had been made to wind up the company in Chancery. The petition to that effect, presented to the Master of the Rolls, had been dismissed with costs, but the litigation had been injurious to the company. Despite of these attempts, the assets of the company were sufficient to meet the liabilities. Two of the four promoters of the company—Messrs. Kearns and Burke—were directors, and both had relinquished all legal claim

to any part of the purchase-money mentioned in the articles, and had left the question of compensation entirely to the shareholders. Efforts had been made to effect an arrangement with the other promoters, Messrs. Smith and Siry, and these gentlemen had, with the view of arriving at an immediate settlement, intimated their willingness to accept in lieu of their claims 5000s.—1500s. in cash, and 3500s. in debentures. Steps were being taken to carry into effect the agreement of April, 1862, with the Franco-Serbo Company. That company was by the agreement to receive 15,000s., and a certain number of shares. The promoters had made themselves personally liable for 15,000s. in the Franco-Serbo Company, and all the land, moveable property, &c., of that company was in the possession or power of the Anglo-Danubian. All the acceptance had been paid, except one for 4000s., which would be payable on the 25th, the whole money, with the exception of 4000s., being found by Messrs. Kearns and Burke. The report also stated that the Franco-Serbo Company had not accepted an allotment of shares, and that the final contract with that company was not yet carried out. The directors did not retract their opinions formerly expressed touching the prospects of the company. The Chairman having moved the adoption of the report, a long discussion ensued.—Mr. Walker entered minutely into the position of the company, strongly commending certain acts of the directors, and moved, as an amendment, that the report be not adopted. On a show of hands being taken, Mr. Walker's amendment was carried by 15 to 11. A poll was then demanded, and the numbers were found to be—for the amendment, 30; against it, 55.—Mr. Walker thereupon protested against the reception of ten votes, but when the Chairman had consented to their omission there was still a majority of 15 against the amendment. Several gentlemen who had possessed shares which had been forfeited claimed to vote, but the Chairman declined to take their names, his ruling on the question being, however, protested against. The motion for adopting the report was, after a good deal of acrimonious discussion, put as a substantive resolution, and carried by a majority of 15; the numbers being 45 in its favour, and 30 against it.

MANUFACTURE OF IRON AND STEEL.

With a view to the utilisation of slack in the manufacture of iron and steel, Mr. John Halford, of Great Barr, Staffordshire, has patented an invention, according to which he proposes so to prepare slack as to free it (as far as may be) from all the constituents thereof, except carbonaceous matter, the resulting products being applicable as a substitute for charcoal, or other highly carbonic fuel, in the processes of casting and moulding metals in lieu of "blackening," also as a base or absorbent in the manufacture of paint and such like articles for coating substances, valuable manufactured products being thus obtained from small coals or slack substances at present of small value.

He takes the mineral substance derived from coal or slack, either by the process of washing, such as is practised in the preparation of small coal or slack for its conversion into coke, or by separation by floating or sifting the same. These separate processes result in the production of a material or residuum, the most finely divided portion of which is the mineral substance he desires to procure. This substance contains much carbonaceous matter, and can be procured from most coals, but in some the proportion is smaller than in others. If necessary, he re-washes the substance, so as to obtain as pure carbon as practicable; he then dries it either in stoves, rotary ovens, or by long exposure to the atmosphere, so as to evaporate as far as possible all moisture. The product is next pulverised by any convenient means, the gaseous matter is expelled by distillation in a gas retort or close oven, constructed so as to exclude atmospheric air, and provided with an outlet for escape of the gaseous and volatile products; the temperature is kept as low as possible. When the gases have been evolved the material may be drawn, and will be found to be in a fit condition for the manufacture of iron and steel. When the product is intended for blackening, or blackening, or paint, or such like articles, as polish for leather, or otherwise, he passes it through a fine sieve of (say) 75 meshes to the inch; the particles of burnt carbon or foreign substance are thus removed. To render the material suitable for the manufacture of iron and steel, it is mixed with water, cut into blocks, and dried.

OXIDE OF ZINC AS A PIGMENT.—Mr. George Lewis, of Philadelphia, has invented a means of giving body to paint manufactured from oxide of zinc. The ordinary mode of manufacturing zinc white paint is to grind the white oxide of zinc in oil, without any previous preparation beyond that of levigation, and its want of what is termed by painters "body" has, notwithstanding its innocuous qualities and unchangeable character, greatly limited its use. The object of the present invention is to enable the white oxide of zinc to be manufactured into paint, having a desirable degree of "body," and to this end the invention consists in subjecting it in its dry state to the combined action of friction and pressure, by which means its bulk is greatly reduced, and it is enabled to be ground with a reduced quantity of oil. The machinery which has been successfully employed for the purpose of effecting the compression or condensation of the oxide consists of revolving chasers or rollers, such as are commonly used for tempering flax seed for the manufacture of linseed oil. With a pair of chasers of 51 in. in diameter and 14 in. wide, making 14 revolutions per minute, the inventor has operated successfully upon 200 lbs. of the oxide at once, continuing the operation for 30 minutes, in which time it was reduced to nearly one-half of its original bulk, a barrel which held only 175 lbs. in the original uncondensed state being capable of receiving about 345 pounds of the condensed oxide. The oxide in its original uncondensed state requiring for grinding 2½ gallons of oil for every 100 lbs. will be found to require, when condensed, only some 1½ gallon for grinding. By subjecting the oxide to the action of the chasers for a longer time than that above mentioned a more highly condensed product may be obtained, which will take a less quantity of oil, and will increase the opacity of the paint.

NEW BLASTING POWDER.—A new blasting powder, which certainly seems to have the recommendation of novelty, has been provisionally specified by Mr. Samuel Ricker, of Frankfort-on-the-Maine. He uses several combinations of ingredients. The first kind of powder is made from the following ingredients, in about the following proportions:—Thirty-eight parts of water and two parts of finely pulverised charcoal are boiled, so that the charcoal may become dissolved, then there are to be added chloride of potash, 20 parts; half calcined sea grass, 4 parts; and finely pulverised stone coal, 2 parts. By this addition the boiling will become interrupted, and must be restored, and then there must be added 7 parts by weight of sawdust, and the whole must be boiled together, so as to form a solution. As a substitute for the sea grass and stone coal there may be used 5 parts by weight of nitrate of soda, and 1 part of pulverised stone coal; or 5 parts nitrate of lead and 1 part stone coal; or 5 parts saltpetre and 1 part of stone coal. When saltpetre is used 2½ instead of 5 parts may be used. To make the second kind of powder he takes water, 20 parts; and pulverised charcoal, 1 part; boils them together till dissolved. Chloride of potash, 10 parts, are then added, and the boiling repeated, after which there are added half calcined sea grass; stone coal, ¾ part; and then 4 parts of sawdust, the whole being well boiled to form a solution. The 6 parts of sea grass may be replaced by carbonate of soda, 5 parts; nitrate of lead, 4 parts; or saltpetre, 4 parts; and the 4 parts of sawdust may be replaced either by coffee grounds, 4 parts; or ground parched wheat, 3½ parts. The third kind of powder is made by first mixing together in a mortar, wheat flour, 2 parts; chloride of potash, 10 parts; then in another mortar pulverised stone coal, 1 part; and pulverised charcoal, 1 part; these two mixtures are compounded in a mortar, and 3 parts by weight of water added. And the last kind of powder is made by first mixing in a mortar wheat flour, 2½ parts; and chloride of potash, 10 parts; then in another mortar bi-carbonate of soda, 7½ parts; nitrate of lead, 4 parts; pulverised stone coal, 1½ part; and pulverised charcoal, 1 part. These two mixtures are compounded in a mortar, and 3 parts by weight of water added.

MAGNETO-ELECTRIC MACHINES.—One of the principal obstacles encountered in the practical application of electricity as a motive-power, is found in the small amplitude of the elementary movements of electro-magnets, since their powers of attraction do not commence till they are almost in contact, the limit of distance varying from 1 to 2 millimetres at most. Thus, all inventors who have proposed their use as a means of producing motive-power, have sought to overcome the difficulty by causing the attraction to exert its power at an angle, or by following the surface of a cone so as to augment the amplitude of the movements, with, however, a proportionate decrease of power. We now propose the adoption of a new combination, to be called *contractor electricque*, which shall imitate the play of the muscles in the organised body, and which will permit the transformation of the trifling direct motion of a series of electro-magnets into a movement, ten, twenty, or a hundred times as great. If we take discs of soft iron, and convert them into very deeply-grooved pulleys, in order that they may receive some thousands of turns of insulated copper wire, we can thus transform them into magnets by the passage of an electric current through the wire. If we superimpose a number of these discs, separated by small rings of India-rubber, one millimetre thick, on the passage of a current all the discs will approach each other, compressing the India-rubber; and thus the pile of discs, if composed of 200 elements, for example, will shorten or contract on itself one decimetre, although each disc moves through but one-half millimetre. This is the first idea of contractors or electric muscles. It is easy to understand that by fitting one end of each pile to the connecting-rod and crank of a fly-wheel, and the other extremity to a fixed support, we can obtain as great a number of revolutions as we desire, with a force depending on the power of the pile. By combining this idea with that of tubular electrical piles producing electricity in quantity, shall we not find the solution of the problem of applying electricity to the economical production of motive-power?—*Porte-feuille Economique de Machines.*

AMERICAN COLLIERY ENGINEERING.—A correspondent of the *Scientific American* writes, as follows:—On the Ashland estate, in the vicinity of the town of Ashland, are located two large collieries—one, worked by Bancroft, Lewis, and Co., employing between 400 and 500 hands; and the other, worked by Mr. Moody, almost as many. These collieries are situated on opposite sides of the Mahoning Creek, and the slopes in each have been sunk to the depth of 600 ft. perpendicular. The mining engineer of the estate, seeing the great advantage to be derived from having the draining of both mines effected by one pump, proposed that an engine should be constructed of sufficient power to perform the required work. A direct-acting engine of 500-horse power was built by the firm of Pott and Vastine, of Pottsville, and erected at Bancroft's Colliery, and having been found to work satisfactorily, the work of connecting the two collieries was commenced. This, as all engineers will understand, was a most difficult undertaking. The intervening distance between the two slopes consisted partly of precipitous mountain side; and the slopes, following the plan of the vein to the depth of 600 ft., were very steep, and unfavourable for the use of inclined planes. A small gangway, nearly large enough to allow the workmen to pass, was started at 500 ft. below the water level in the eastern colliery, and a drive forward with the intention of meeting a similar gangway from the western colliery; but as the miners advanced the influx of water became greater, and finally, owing to some accident to the pump, drove the men out, and rose 300 ft. in the slope, completely flooding out the lower part of the mine. The western gangway was then driven to within 60 ft. of the flooded gangway, and preparations made for boring through the intervening mass of coal and slate. A strong battery of heavy timber was first erected to prevent the washing away of the coal by the immense pressure of the 300 ft. of water about to be tapped. The drive was then put into operation, and with such nicety and skill had the gangways been driven, and so exactly was the direction of the drill determined, that the water was struck at the first attempt. Only from an actual inspection of the collieries can an idea be formed of the delicacy of levelling and measurement required to execute successfully such a work, where the smallest error in the direction of slope of the gangways would involve everything in inextricable confusion. Mr. E. H. Fisher, the engineer under whose direction the work was performed, has had for several years the entire control of the engineering department of the Ashland estate, upon which are situated some of the largest collieries in Schuylkill County.

MINERAL TRANSPORT IN FRANCE.—The railway companies of the Est, des Ardennes, and du Nord have adopted a common tariff for the carriage of pig-iron from the ports on the northern coast to the principal points of sale. The proposition has just been submitted to the necessary authorities.

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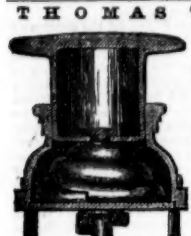
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By providing the power of calculating the time and cost to explore a certain depth and extent of ground, speculation in mining will be assimilated to commercial pursuits, with this unmistakable advantage—that when the ground has been once carefully and judiciously selected, and operations properly and systematically carried out for its development, there would be far less chance of unsatisfactory results than are met with by merchants and manufacturers in the usual routine of their business. As this important invention must beneficially interest the landowners, mine proprietors, merchants, and miners, we opine it will meet with immediate adoption. —*Mining Journal*

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The work altogether forms an acceptable addition to the existing stock of mining literature, and may be commended to the attention of those who wish to extend their acquaintance with this branch of our home industry. —*Daily News*

Mr. Spargo's "Statistics of and Observations upon the Mines of Cornwall and Devon" deserves to be perused by all parties who are interested in these investments, and the facts and opinions presented appear to be stated in a fair and candid manner. —*Herald*

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An instructive publication, deserving of every encouragement. —*Daily Telegraph*

We recommend this work as a guide to the mines of Cornwall and Devon. —*Chronicle*

The pamphlet is worthy the attention of all engaged in mining speculations. —*Post*

It contains in a compressed, but still comprehensive form, all the information requisite to guide an adventurer in the selection of mines for legitimate investment. —*Westminster*

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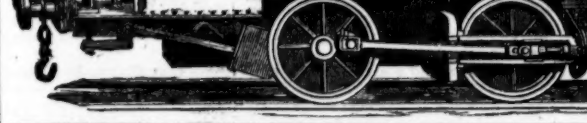
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After the extracts that have been given, it is hardly necessary to say much in commendation of the work. Its author has done signal service to engineering science, and one that will prove indirectly of real benefit to our iron manufacture. Hitherto we have possessed no work on any one mechanical property of wrought-iron to approach the unpretending volume before us in the comprehensiveness and scientific arrangement of its experimental results. —*Civil Engineer and Architects' Journal*, April 1, 1863.

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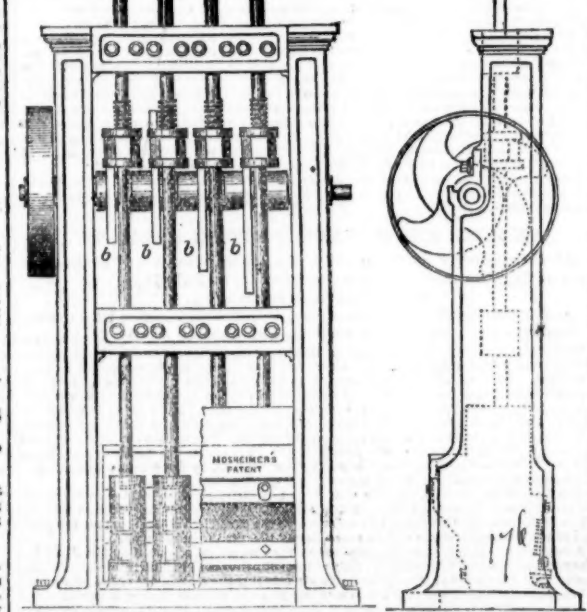
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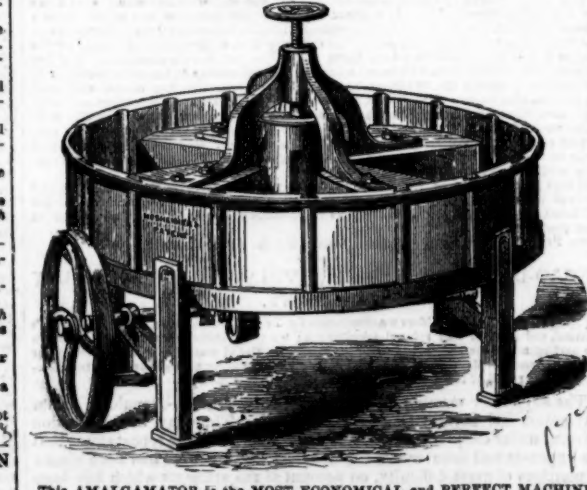


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The manner in which the work has been done, and the lucid way in which the results are recorded, reflect the highest credit upon the author, and we doubt not that his book will enjoy that large amount of patronage which it so well deserves. —*Mining Journal*, August 16, 1862.

Mr. Kirkaldy here presents us with a vast amount of information, arranged and classified in a very convenient manner for reference, * * * a careful perusal of which we commend to all practical men engaged in the useful employment of steel and iron, and to the scientific world in general. —*Artisan*, August 1, 1862.

The Institution could not be too grateful to Mr. Kirkaldy for his labours; for he had collected a mass of facts which were of the highest value in a scientific and practical point of view. —*Proceedings of the Institution of Engineers in Scotland*, Nov. 13, 1862.

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